

### **AMENDMENTS TO THE DRAWINGS**

Please replace the present drawings of Figures 1-30 with the attached replacement Figures 1-30. No new matter is entered into the application by way of these replacement drawings.

The replacement drawings are identical to those transmitted by the International Bureau on April 22, 2005 and as found on PAIR, except drawings for 17 Figures submitted on October 12, 2005 in response to the Notification of Missing Requirements of August 12, 2005, which said replacement drawings provided English language translations of text in the 17 Figures replaced.

## **REMARKS**

### **Status of the Claims**

Claims 54-56, 60-62 and 65-73 are currently pending in the application. Claims 53-57, 60-62 and 65-70 stand rejected. The Examiner objects to claims 55 and 56. Claims 54-56, 60 and 65-70 have been amended as set forth herein. Claims 53 and 57-59 have been cancelled herein. All amendments and cancellations are made without prejudice or disclaimer. Claims 71-72 have been added herein. No new matter has been added by way of the present amendments.

In general, many of the amendments to the claims are to conform the claims more closely to US format.

Additionally, the amendment to claim 55 is supported by the specification at, for instance, page 5, line 24 to page 6, line 6, disclosing microorganisms harboring DNA encoding several different ("at least one DNA) proteins such as a biosurfactant (perhaps a plastic binding protein) and a plastic degrading enzyme. The sequence of the biosurfactant recited in claim 55 is SEQ ID NO:1, which is supported throughout the specification including the sequence listing and encodes a hydrophobin, for instance see page 16 of the specification at lines 12-19. Further, the specification at page 17, lines 10-20 provides support for sequences that are at least 90% and at least 99% identical and at least 95% identical to SEQ ID NO:1 (stating that 1-20 amino acids may be replaced, deleted, or added, which is equivalent to about 1% to 13% of the entire amino acid sequence of SEQ ID NO:1), thereby also providing support for new claims 71 and 72 as well as claim 56, part (c).

Amendment of claim 60 is to change dependency of the claim to claim 55 or claim 56. Amendment of claim 65 is supported by the specification at, for instance, Example 6 and page 4,

lines 10-15. Amendments to claim 66 are supported at least by Example 9, at pages 49-53 of the specification. Finally, new claim 73 is supported by the specification at least at page 9, line 6.

Reconsideration is respectfully requested.

### **Interview**

Applicants and Applicants' representatives thank the Examiner for extending the courtesy of an interview on October 16, 2007. The substance of the interview is substantially as reflected in the Interview Summary of November 11, 2007. Briefly, during the interview, all issues barring allowance of the present claims were discussed. Particularly, a set of claim amendments proposed by Applicants were reviewed by the Examiner and discussed. The Examiner indicated agreement that if the proposed amendments to the claims were submitted, they would most likely address many of the outstanding rejections. The Examiners also suggested a few additional claim amendments that would assist in addressing any enablement and written description issues that may remain. Therefore, pursuant thereto, Applicants submit herein the proposed claim amendments for entry into the record and consideration by the Examiner. Reconsideration and allowance thereof are respectfully requested.

### **Objections to the Drawings**

The Examiner states that Figures 3-7, 10, 12-17 and 19 are missing in the present application. (*See*, Office Action of July 9, 2007, at page 3, hereinafter, "Office Action"). As discussed during the Interview of October 16, 2007, all figures were transmitted to the USPTO from the International Bureau on April 22, 2005, as evidenced by the record on PAIR and the

Notification of Missing Requirements mailed on September 12, 2005. It is noted that in response to the Notice of Missing Requirements, Applicants provided substitute Drawings for some of the drawings and requested replacement of those drawings only at that time. Thus, the remaining drawings, specifically Figures 3-7, 10, 12-17 and 19 should remain as part of the application as originally provided to the USPTO by the International Bureau.

However, to fully satisfy the Examiner's request and to provide clarity to any possible confusion regarding the drawings, a full substitute set of drawings is provided herein. No new matter is entered into the specification by way of these substitute drawings.

Reconsideration and withdrawal of the objection to the drawings are respectfully requested.

### **Objections to the Claims**

The Examiner objects to claims 55, 56 and 68. (*See*, Office Action, at page 4). Regarding claims 55 and 56, the Examiner suggests canceling the withdrawn subject matter directed to SEQ ID NOS: 2 and 3 and replacing the phrase "base sequence" with the phrase "nucleotide sequence." (*Id.*). The Examiner further states that claim 68 contains a misspelling of the word "Trichoderma" and requests correction thereof. (*Id.*).

To expedite prosecution, amendments to claims 55, 56 and 68 have been provided herein to address these objections. Claims 55 and 56 have been amended herein without prejudice or disclaimer to remove reference to SEQ ID NOS: 2 and 3. Furthermore, claim 68 has been amended to correct the misspelling of the term Trichoderma.

Reconsideration and withdrawal of the objections to claims 55, 56 and 68 are respectfully requested.

### **Rejections Under 35 U.S.C. § 112, Second Paragraph**

Claims 54-57 and 66 stand rejected under 35 U.S.C. § 112, second paragraph, for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. (*See*, Office Action, at pages 4-7). Claim 57 has been cancelled herein without prejudice or disclaimer, thus obviating the rejection as to claim 57. Applicants traverse the rejection as to the remaining claims as set forth herein.

The Examiner recommends substituting the phrase “obtained from” for the phrase “derived from” in claims 54, 57 and 66. (*Id.* at page 5). The Examiner believes the word “homologue” as recited in the claims is indefinite. That is, the Examiner cannot determine what this word encompasses, i.e. which homologues, from which species, the number of homologues, etc. (*Id.*). The Examiner also states that the phrase “substantially the same as” recited in claims 55 and 56 is indefinite. (*Id.*). The Examiner states that the phrase “having substantially the same function as the hydrophobin” is indefinite as recited in claims 55 and 56. (*Id.* at page 6). The Examiner states that the term “stringent” is not definite, as recited in claim 56. (*Id.*). The Examiner states that the phrase “a base sequence complementary to the DNA” is indefinite because it is unclear whether this phrase means full length complementary sequences or shorter sequences having complementarity. (*Id.* at pages 5-6). Finally, The Examiner states that “useful substance” recited in claim 65 is indefinite. (*Id.* at page 6).

Although Applicants do not agree that the claims are indefinite, to expedite prosecution, the claims have been amended herein without prejudice or disclaimer to substantially recite that which the Examiner suggests. That is, the phrase “derived from” has been deleted and replaced with the suggested term “obtained from” as suggested by the Examiner. The term “homologue” has been deleted from the claims without prejudice or disclaimer, thus obviating this issue. The terms “substantially the same as,” “a base sequence complementary to the DNA,” “having substantially the same function as the hydrophobin” and “useful substance” have been removed from the claims without prejudice or disclaimer.

The term “stringent” has been further defined in claim 56 to mean “a sodium concentration of 900 mM and pH of 6 to a pH of 8 at 68°C.” This is supported by the specification at, for instance, page 17, lines 1-5.

Reconsideration and withdrawal of the indefiniteness rejection of claims 54-56 and 65 are respectfully requested.

### **Rejections Under 35 U.S.C. § 112, First Paragraph**

#### **Enablement**

Claims 53-57, 60-62 and 65-70 stand rejected under 35 U.S.C. § 112, first paragraph, for failing to comply with the enablement requirement. (*See*, Office Action, at pages 7-12). Claims 53 and 57 have been cancelled herein without prejudice or disclaimer, thus obviating the rejection of these claims. Applicants traverse the rejection as to the remaining claims as set forth herein.

The Examiner states that the specification does provide sufficient enablement support to one of skill in the art to practice the following subject matter:

- a transformant comprising the DNA sequence of SEQ ID NO:1, and
- encoding a polypeptide having biosurfactant/hydrophobin activity,  
and/or
- a gene encoding cutinase of *Aspergillus oryzae* (CutL1),
- said gene spanning the coding region generated by PCR using the  
oligonucleotide primers of SEQ ID NOS:12 and 13, and
- having plastic degrading activity. (*Id.* at page 7).

However, the Examiner states that the specification does not provide enablement support for claims encompassing:

- any transformant comprising a DNA encoding any polypeptide having  
biosurfactant/hydrophobin activity and/or any gene encoding an enzyme with  
plastic degrading activity from *Aspergillus oryzae* including variants, mutants and  
recombinants, or
- a DNA encoding a polypeptide wherein said polypeptide comprises any  
amino acid replaced, deleted or added to SEQ ID NO:1 or its partial sequence and  
having substantially the same function as hydrophobin, or
- said DNA encoding any useful substance or any gene encoding an  
amylase including variants, mutants and recombinants. (*Id.* at pages 7-8).

Although Applicants do not agree that the claims lack enablement support in the specification, to expedite prosecution only, claims 55 and 56 have been amended herein without

prejudice or disclaimer to remove language directed to the subject matter the Examiner believes is not enabled, such as language including “polypeptide having an amino acid sequence of (a) wherein a part of amino acid residues are replaced, deleted, or added, and having substantially the same function as the hydrophobin” as previously recited in claim 55, “having substantially the same function as the DNA (a)” as previously recited in claim 56, and the term “useful substance.” Thus, as presently amended, Applicants believe the claims are fully supported by the as-filed specification such that one of skill in the art would be able to practice the full scope of the invention represented by the presently amended claims. Further, it appeared that the Examiners were substantially in agreement that these amendments would address the majority of the enablement issues as discussed during the Interview of October 16, 2007.

These amendments are supported throughout the specification, as discussed in detail in the first paragraph of page 7 of the present amendment. Furthermore, with respect to the use of any amylase, Applicants wish to point out that many amylase enzymes are known to one of skill in the art as of the time of filing of the present application. Thus, Applicants need not provide disclosure or enablement for this known subject matter. A “patent need not teach, and preferably omits, what is well known in the art.” (*See, Spectra-Physics, Inc. v. Coherent, Inc.*, 827 F.2d 1524, 1534 (Fed. Cir. 1987) and *Hybritech v. Monoclonal Antibodies*, 802 F. 2d 1367, 231 U.S.P.Q. 81 (Fed. Cir. 1986), cert. denied, 107 S. Ct. 1606 (1987)).

Furthermore, one of skill in the art knew at that time that the genome of *A. oryzae* encoded only a single cutinase. (*See, for instance, Ohnishi et al., FEMS Microbiol. Lett.*, 126(2):145-150, 1995, cited in Example 3 of the present specification). However, Applicants also point out that the genes of hydrophobin and its homologues of *A. oryzae* were not known at



the time of filing of the present application and that Applicants provided in the present application the first fully identified sequence of said hydrophobin.

Therefore, reconsideration and withdrawal of the enablement rejection of claims 54-56, 60-62 and 65-70 are respectfully requested.

#### Written Description

Claims 53-57, 60-62 and 65-70 stand rejected under 35 U.S.C. § 112, first paragraph, for failing to comply with the written description requirement. (*See*, Office Action, at pages 12-14). Claims 53 and 57 have been cancelled herein without prejudice or disclaimer, thus obviating the rejection of these claims. Applicants traverse the rejection as to the remaining claims as set forth herein.

The Examiner's comments on pages 12-14 provided in support of the rejection of the claims as lacking written description support in the specification are similar in substance to the reasoning provided as a basis of the lack of enablement rejection commented upon, above.

Therefore, it is believed that the amendments to the claims already discussed above, at page 7 and in the enablement section, adequately address the written description issues commented upon by the Examiner at pages 12-14 of the Office Action. Furthermore, as to any remaining possible issues, the MPEP states that, "If a skilled artisan would have understood the inventor to be in possession of the claimed invention at the time of filing, even if every nuance of the claims is not explicitly described in the specification, then the adequate description requirement is met." (*See*, MPEP, at 2163, II, A, 3, (a), citing *Vas-Cath v. Mahurkar*, 935 F.2d 155, at 1563, 19 USPQ2d 1111, at 1116 (CAFC 1991), *Martin v. Johnson*, 454 F.2d 746, 751,

172 USPQ 391, 395 (CCPA 1972), stating “the description need not be in *ipsis verbis* [*i.e.*, “in the same words”] to be sufficient”).

Reconsideration and withdrawal of the written description rejection of claims 54-56, 60-62 and 65-70 are respectfully requested.

### **Rejections Under 35 U.S.C. § 102(b)**

Stringer et al., *Mol. Microbiol.*, 1995, 16(1):33-44

Claims 53, 68 and 69 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Stringer et al., *Mol. Microbiol.*, 1995, 16(1):33-44 (hereinafter, “Stringer et al.”). (See, Office Action, at page 15). Claim 53 has been cancelled herein without prejudice or disclaimer, thus obviating the rejection of claim 53. Applicants traverse the rejection as to claims 68 and 69 as set forth herein.

The Examiner states that Stringer et al. disclose an isolated polynucleotide having 75.3% homology to SEQ ID NO:1. (*Id.*).

Although Applicants do not agree that the claims are anticipated by the disclosure of Springer et al., to expedite prosecution, the claims have been amended to require that the sequences encompassed be at least 90% identical to SEQ ID NO:1. Support for this amendment may be found at, for instance, page 17, lines 10-20 of the specification. Claim 56 further limits the sequence identity requirement to 95%. New claims 71 and 72 further limit the sequence identity requirement to 99% and 100%, respectively. These limitations are supported at page 17, lines 10-20 of the specification.

Dependent claims 68 and 69 are not anticipated as, *inter alia*, depending from non-anticipated base claims, claims 55 and 56.

Reconsideration and withdrawal of the anticipation rejection of claims 68 and 69 are respectfully requested.

Askolin et al., *Applied Microbiol. Biotechnol.*, 2001, 57:124-130

Claims 53 and 68 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Askolin et al., *Applied Microbiol. Biotechnol.*, 2001, 57:124-130 (hereinafter, "Askolin et al."). (See, Office Action, at page 15). Claim 53 has been cancelled herein without prejudice or disclaimer, thus obviating the rejection of claim 53. Applicants traverse the rejection as to claim 68 as set forth herein.

The Examiner states that Askolin et al. disclose a transformant, fungal host cell belonging to *Trichoderma* comprising a polynucleotide encoding a polypeptide having hydrophobin activity. (*Id.*).

Although Applicants do not agree that the claims are anticipated by the disclosure of Askolin et al., to expedite prosecution, the claims have been amended to require that the sequences encompassed be at least 90% identical to SEQ ID NO:1. Support for this amendment may be found at, for instance, page 17, lines 10-20 of the specification. Claim 56 further limits the sequence identity requirement to 95%. New claims 71 and 72 further limit the sequence identity requirement to 99% and 100%, respectively. These limitations are supported at page 17, lines 10-20 of the specification. Furthermore, the claims have been amended to require the transformant harbor the nucleotide sequences of both a hydrophobin/biosurfactant and a plastic

degrading enzyme. Askolin et al. do not disclose a plastic degrading enzyme. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." (*See, Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987)).

Dependent claim 68 is not anticipated as, *inter alia*, depending from non-anticipated base claims, claims 55 and 56.

Reconsideration and withdrawal of the anticipation rejection of claim 68 are respectfully requested.

Tsuchiya et al., *FEMS Microbiol. Lett.*, 1996, 143:63-67

Claims 53, 60-62 and 67-70 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Tsuchiya et al., *FEMS Microbiol. Lett.*, 1996, 143:63-67 (hereinafter, "Tsuchiya et al."). (*See*, Office Action, at page 15). Claim 53 has been cancelled herein without prejudice or disclaimer, thus obviating the rejection of claim 53. Applicants traverse the rejection as to the remaining claims as set forth herein.

The Examiner states that Tsuchiya et al. disclose cloning and determination of the nucleotide sequence of an extracellular lipolytic enzyme which is a cutinase of *Aspergillus oryzae* and a transformant comprising this sequence. (*Id.* at page 16).

Although Applicants do not agree that the claims are anticipated by the disclosure of Tsuchiya et al., to expedite prosecution, the claims have been amended without prejudice or disclaimer to require a transformant harboring the nucleic sequences of both a hydrophobin/biosurfactant and a plastic degrading enzyme. Tsuchiya et al. do not disclose both

of these limitations. “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” (*See, Verdegaa Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987)).

Dependent claim 68 is not anticipated as, *inter alia*, depending from non-anticipated base claims, claims 55 and 56.

Reconsideration and withdrawal of the anticipation rejection of claim 68 are respectfully requested.

#### **Rejections Under 35 U.S.C. § 102(e)**

Claims 53-57 and 67-70 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Berka et al., U.S. Patent No. 6,902,887 (hereinafter, “Berka et al.”). (*See*, Office Action, at page 16). Claims 53 and 57 has been cancelled herein without prejudice or disclaimer, thus obviating the rejection of claims 53 and 57. Applicants traverse the rejection as to the remaining claims as forth herein.

The Examiner states that Berka et al. disclose an isolated polynucleotide having 99.7% homology to SEQ ID NO:1. (*Id.*).

Although Applicants do not agree that the claims are anticipated by the disclosure of Berka et al., to expedite prosecution, independent claims 55 and 56 have been amended without prejudice or disclaimer to require a transformant harboring the nucleic sequences of both a hydrophobin/biosurfactant and a plastic degrading enzyme. Berka et al. do not disclose both of these limitations. “A claim is anticipated only if each and every element as set forth in the claim

is found, either expressly or inherently described, in a single prior art reference.” (See, *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987)).

Dependent claims 54 and 67-70 are not anticipated as, *inter alia*, depending from non-anticipated base claims, claims 55 and 56.

Reconsideration and withdrawal of the anticipation rejection of claims 54-56 and 67-70 are respectfully requested.

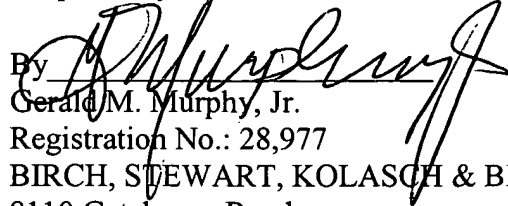
### CONCLUSION

If the Examiner has any questions or comments, please contact Thomas J. Siepmann, Ph.D., Registration No 57,374, at the offices of Birch, Stewart, Kolasch & Birch, LLP.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to our Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under § 1.17; particularly, extension of time fees.

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Respectfully submitted,

By   
Gerald M. Murphy, Jr.  
Registration No.: 28,977  
BIRCH, STEWART, KOLASCH & BIRCH, LLP

8110 Gatehouse Road  
Suite 100 East  
P.O. Box 747

Falls Church, Virginia 22040-0747  
(703) 205-8000  
Attorney for Applicants